REMARKS

Reconsideration of the above referenced application in view of the following remarks is requested. Claim 8, 10, 12-13, 16, 18, 23, and 26 have been amended. Claims 1-7 were previously cancelled. Claims 9, 14, 19, 21-22, and 24-25 have been cancelled. Existing claims 8, 10-13, 15-18, 20, 23, and 26-38 (as amended) remain in the application.

ARGUMENT

Claim Rejections – 35 U.S.C. § 112

Claim 26 is rejected under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such as omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. As it is not clear what is intended by claiming a computer system wherein the first bus agent comprises an apparatus chosen from a list comprising "a storage medium." Clarification or correction is required.

Claim 26 has been amended to change "a storage medium" to "a storage device". As a result, this rejection is now moot.

Claim Rejections – 35 U.S.C. § 102

Claims 8, 18, 27 and 31 are rejected under 35 U.S.C. § 102(b) as being anticipated by Witek et al. (US 5,043,886) (hereinafter Witek).

The Examiner summarily rejected Applicants arguments traversing the 35 U.S.C. 102 rejections of claims 8, 18, 27, and 31 and maintained his original rejections.

Applicants are very disappointed and respectfully disagree. Applicants have made more efforts to refine the claims and presented arguments below to traverse the 35 U.S.C. 102 rejections and possible 35 U.S.C. 103 rejections of these claims. Applicants urge the Examiner to consider Applicants' arguments and amendments carefully before repeating his rejections. This would help improve the efficiency of prosecuting this case and avoid any appeals.

The Examiner asserted that figures 1-4 and col. 2, lines 43-68 of Witek disclose, expressly or implicitly, every limitation recited in each of independent claims 8, 18, 27, and 31. Applicants respectfully disagree. The Examiner states, "As Witek is considered to teach, as effectively acknowledged by the applicant in the traverse of the rejection, a means by which a value and corresponding ownership local to a processor may be made globally visible (to plurality of processors) by utilizing Request/Read-For-Ownership (RFO) semantics; where as Witek does not limit the teaching to strongly or weakly ordered implementations, no such limitation is presumed assuming appropriate safeguards are maintained to warrant coherency; thereby the applicant's claims are considered inherently taught by Witek and merely expressed in other form in absents of any material explanation of some novelty derived capability of utility otherwise (as although the applicant seems to assert a novelty associated with an out-of-order grant of RFO for a strongly ordered system, in fact such an implementation may be viewed as a weakly ordered system in this respect, thereby the novelty claimed is in fact indistinguishable from an implementation of RFO in weakly ordered system which the applicant is considered to correspondingly indirectly acknowledge as being known as being implicitly identifiable as those which are not strongly ordered RFO

implementations)." Again Applicants must admit here that it is extremely difficult to parse such a single long sentence. Applicants will make their best to understand what the Examiner is really saying here. In case Applicants misunderstand the Examiner, please point such misunderstanding.

To make independent claims 8 and 18 more clearly reflect the subject matter disclosed in the present application, these two claims have been amended to incorporate limitations originally recited in claims 9 and 19, respectively. If Applicants understand correctly here, the Examiner basically asserted that because Witek does limit its disclosure to strongly/weakly ordered implementations and because Witek discloses that coherency must be maintained whatever form of implementation is used, any form of implementation is thus inherently taught by Witek. Applicants must disagree here. According to the Examiner's logic, there should not be any patent on any form of implementation regarding issuances of store operations to improve efficiency since Witek became publicly accessible. Obviously this is not true. It is true that coherency must be maintained in a multiprocessor system. However, there are many ways to achieve coherency. Applicants hope that the Examiner agrees that novel ways to achieve data coherency in a multiprocessor system are patentable.

Conventional ways to achieve coherency in a strongly ordering system are by forcing a subsequent store operation to wait to be issued until data of prior store operation become globally observable. As the background section of the present application points out that these conventional ways are not efficient because they increase latency of store operation issuance and thus compromise the performance. The present application discloses a way to improve the performance of a strongly

ordering processor by allowing a second store operation to be issued regardless whether a prior-issued first store operation has become globally observable by using a global observation store buffer (GoSB). Claims 8, 18, 27 and 31 clearly recites the new features regarding the out-of-order store operation issuance in a strongly ordering processor, disclosed in the present application. Nowhere does Witek disclose such an approach to improve the efficiency of store operation issuance in a strongly ordering processor. In fact, Witek does not disclose any approach for store operation issuance in either a strongly ordering or weakly ordering processor.

Because Witek does not teach, expressly or implicitly, every limitation recited in independent claims 8, 18, 27, and 31 (as amended), these claims are thus not anticipated by Witek. Thus, Applicants here respectfully request that the 35 U.S.C. § 102 rejections of claims 8, 18, 27, and 31 be withdrawn.

Claim Rejections – 35 U.S.C. § 103

Claims 9-17, 19-25, 28-30, and 32-38 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Witek.

Because Witek does not teach, expressly or implicitly, every limitation recited in independent claims 8, 18, 27, and 31 (as amended) based on reasons presented above in traversing the 35 U.S.C. § 102 rejections of these claims, and because there is no other references cited or common knowledge asserted to cure those deficiencies in Witek, Witek does not make all of the claims that depend therefrom obvious under 35 U.S.C. § 103(a). Therefore, claims 9-17, 19-25, 28-30, and 32-38, being dependent from claims 8, 18, 27, and 31, respectively, are patentable over Witek. Accordingly,

Applicants respectfully request that the 35 U.S.C. § 103 rejections of these claims over Witek be withdrawn.

The Examiner asserted in the Office Action, that a GoSB may be considered to be equivalent to a main memory. Applicants strongly disagree. Had the GoSB been equivalent to the main memory, then the latency for store operation issuance would be even longer because data stored by a prior-issued store operation would have been written back to the main memory from a cache before any subsequent store operation can be issued. It is true that anything stored in the memory would be globally visible, but not any buffer in which data may be made globally visible is the main memory. Applicants hope that the Examiner agrees with this statement here. Otherwise, nothing can be new according to the Examiner's logic. The Examiner used the similar logic to assert that NcSQ is not new. Applicants here sincerely request that the Examiner reconsider his 35 U.S.C. 103 rejections of these claims.

CONCLUSION

Based on the foregoing, it is submitted that that all active claims are presently in condition for allowance, and their passage to issuance is respectfully solicited. If the Examiner has any questions, the Examiner is invited to contact the undersigned at (503) 264-1700. Entry of this amendment is respectfully requested.

Respectfully submitted,

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/Guojun Zhou/

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